

August 30, 2016

Mr. Ryan C. Schow, Interim Director  
Joseph Merrill Engineering Building  
50 S. Central-Campus Drive, Room 1206  
University of Utah  
Salt Lake City, UT 84112

SUBJECT: UNIVERSITY OF UTAH – U.S. NUCLEAR REGULATORY COMMISSION  
ROUTINE INSPECTION REPORT NO. 50-407/2016-202

Dear Mr. Schow:

From August 8-11, 2016, the U.S. Nuclear Regulatory Commission (NRC or the Commission) conducted an inspection at your University of Utah TRIGA Reactor Facility. The enclosed report documents the inspection results which were discussed on August 11, 2016, with you and Ms. Karen Langley, Director, Radiological Health Department and Radiation Safety Officer for the University of Utah.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspector reviewed selected procedures and records, observed various activities, and interviewed personnel. Based on the results of this inspection, no findings of significance were identified. No response to this letter is required.

In accordance with Title 10 of the *Code of Federal Regulations*, Section 2.390, "Public inspections, exemptions, requests for withholding," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (Agencywide Documents Access and Management System (ADAMS)). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

R. Schow

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Should you have any questions concerning this inspection, please contact Craig Bassett at (301) 466-4495 or by electronic mail at [Craig.Bassett@nrc.gov](mailto:Craig.Bassett@nrc.gov).

Sincerely,

***/Michael Takacs for RA/***

Anthony J. Mendiola, Chief  
Research and Test Reactors Oversight Branch  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

Docket No. 50-407  
License No. R-126

Enclosure:  
As stated

cc: See next page

University of Utah

Docket No. 50-407

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R. Schow

- 2 -

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**U.S. NUCLEAR REGULATORY COMMISSION**  
**OFFICE OF NUCLEAR REACTOR REGULATION**

Docket No. 50-407

License No. R-126

Report No. 50-407/2016-202

Licensee: University of Utah

Facility: Utah Nuclear Engineering Program TRIGA Reactor Facility

Location: Salt Lake City, Utah

Dates: August 8-11, 2016

Inspector: Craig Bassett

Approved by: Anthony J. Mendiola, Chief  
Research and Test Reactors Oversight Branch  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

Enclosure

## EXECUTIVE SUMMARY

University of Utah  
Utah Nuclear Engineering Program TRIGA Research Reactor  
U.S. Nuclear Regulatory Commission  
Inspection Report No. 50-407/2016-202

The primary focus of this routine, announced inspection was the onsite review of selected aspects of the University of Utah (the licensee's) 100 kilowatt Class II research reactor safety program, including: (1) organizational structure and staffing; (2) review and audit and change control functions; (3) procedures; (4) radiation protection program; (5) effluent and environmental monitoring; and (6) transportation of radioactive material since the last U.S. Nuclear Regulatory Commission (NRC) inspection of these areas. The licensee's program was acceptably directed toward the protection of public health and safety, and in compliance with NRC requirements. No violations or deviations were identified.

### Organizational Structure and Staffing

- The licensee's organizational structure and staff responsibilities were in compliance with requirements specified in the Technical Specifications (TS).

### Review and Audit and Change Control Functions

- Audits and reviews were being conducted by designated individuals and reviewed by the Reactor Safety Committee in accordance with the requirements specified in TS Section 6.2, "Review and Audit."
- Change reviews were being conducted in accordance with the requirements in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.59, "Changes, tests and experiments."

### Procedures

- Facility procedural review, revision, control, and implementation satisfied TS requirements.

### Radiation Protection Program

- Surveys were being completed and documented acceptably to permit evaluation of the radiation hazards present.
- Postings met regulatory requirements.
- Personnel dosimetry was being worn as required, and doses were well within the licensee's procedural action levels and NRC regulatory limits.
- Radiation monitoring equipment was being maintained and calibrated, as required.
- The Radiation Protection and As Low As Reasonably Achievable (ALARA) programs satisfied regulatory requirements.

- Training was being provided to staff members in the area of radiation protection in accordance with regulatory requirements.

#### Effluent and Environmental Monitoring

- Effluent monitoring satisfied license and regulatory requirements and releases were within the specified regulatory and TS limits.
- Releases were within the specified regulatory and TS limits.

#### Transportation of Radioactive Material

- The licensee transferred radioactive waste material to the campus Radiological Health Department for disposal, as needed.
- None of the licensee personnel had the current training required to ship radioactive material from the facility.

## REPORT DETAILS

### **Summary of Plant Status**

The University of Utah (the licensee) continued to operate the 100 kilowatt TRIGA Mark I research reactor as needed in support of sample irradiation, reactor operator training, educational demonstrations, preventive maintenance, and operational surveillance testing required by the Technical Specifications (TS). While the reactor was not operated during this inspection due to problems with the nuclear instrumentation, it is typically operated one or two days a week at various power levels up to 90 kilowatts.

#### **1. Organizational Structure and Staffing**

##### a. Inspection Scope (Inspection Procedure (IP) 69001)

The inspector reviewed the following regarding the licensee's organization and staff responsibilities to ensure that the requirements of Section 6.1, "Organization," of the TS were being met:

- Organizational structure and management responsibilities
- Organizational guidance contained in the Utah Nuclear Engineering Program (UNEP) Procedure P-001 R1, "Description of Operations," Section II, entitled "Organization and Responsibilities"
- Amendment Number (No.) 9 to Facility Operating License No. R-126, dated December 12, 2011, which amended the TS

##### b. Observations and Findings

Through discussions with licensee representatives, the inspector determined that there had been no changes to management responsibilities and the organizational structure at the facility since the last Nuclear Regulatory Commission (NRC) inspection in the area of radiation protection conducted in September 2012 (NRC Inspection Report No. 50-407/2014-202). It was noted that the person who was the designated Facility Director had temporarily taken a position with the International Atomic Energy Agency and the Reactor Supervisor had been appointed as the Interim Director. Because the current operational schedule is not demanding, the Reactor Supervisor appeared to be able to fill both positions without any detrimental effects on the program. Allowing one person to fill two positions appeared to be acceptable for the present.

Through review of records and logs, and through discussions with licensee personnel, the inspector determined that the organizational structure and staffing observed at the UNEP TRIGA Reactor Facility met the requirements stated in Section 6.1 of the TS.

##### c. Conclusion

The organizational structure and staffing were consistent with TS requirements.



## 2. Review and Audit and Change Control Functions

### a. Inspection Scope (IP 69001)

The inspector reviewed the following to ensure that the review and audit requirements in TS Section 6.2, "Review and Audit," were being met and to verify compliance with Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.59, "Changes, tests and experiments":

- Reactor Safety Committee (RSC) meeting minutes from June 2014 to the present
- Radiation Safety and As Low As Reasonably Achievable (ALARA) Audits completed during the past 2 years and licensee responses to the safety reviews and audits
- Guidance contained in UNEP Procedure P-001 R1, "Description of Operations," Section II, entitled "Organization and Responsibilities"
- Form UNEP-035 R4, "Audit and Review Program Checklist," which documented the audits that had been completed
- The University of Utah TRIGA Reactor Annual Operating Report for the reporting period of July 1, 2014, through June 30, 2015, submitted to the NRC on July 27, 2015
- The University of Utah TRIGA Reactor Annual Operating Report for the reporting period of July 1, 2015, through June 30, 2016, submitted to the NRC on July 29, 2016

### b. Observations and Findings

#### (1) Review and Audit

The inspector verified that the RSC met at least annually as required by the TS. It was noted that a subcommittee (or the full committee) generally held quarterly meetings in addition to the TS-required annual meetings. The inspector reviewed the RSC meeting minutes since June 2014. It was noted that the minutes contained, among other documents, quarterly or monthly reports from the Reactor Director, the Reactor Supervisor, and the university Radiation Safety Officer (RSO). Review of the committee meeting minutes indicated that the RSC provided appropriate guidance and direction for reactor operations, and ensured acceptable use and oversight of the reactor.

Since the last inspection, all required audits of reactor facility activities and reviews of programs, procedures, equipment, and proposed tests or experiments had been completed and documented as required. The audits were completed by specific RSC members or by designated individuals and then reviewed by the RSC. The inspector noted that the safety reviews and audits and the associated findings were acceptably detailed and that the licensee responded and took corrective actions as needed. Additionally, the annual reviews of the Radiation Protection

Program and the Emergency Plan, as well as the biennial review of the Security Plan, had been conducted and acceptably documented.

(2) Change Control Functions

(a) General 10 CFR 50.59 Reviews

The inspector noted that various items of equipment had needed to be repaired or replaced since the last inspection. Screening reviews of these projects had been conducted by the licensee to verify that 10 CFR 50.59 evaluations were not needed because the projects involved replacement of failed parts with spares of the same manufacture and not change-out to a different type or model of equipment. The inspector determined that facility change evaluations would be completed if the applicable 10 CFR 50.59 screening reviews indicated that full evaluations were needed.

(b) 10 CFR 50.59 Reviews of the Repairs/Modifications to the Reactor Console and the Percent and Log Power Ion Chambers

In April 2015, the licensee began experiencing problems with their fission counter. In order to correct the situation, the licensee had to replace that fission counter with a spare one they had on hand. That also required moving the Reactor Control Console so that the wiring from the "new" fission counter could be connected. When they moved the Control Console they found that there were many extraneous wires that had been abandoned-in-place following repair work that occurred in the past. The licensee then proceeded to remove the unnecessary wiring and install/connect wiring for the "new" fission counter. The electronics card in the Control Console associated with the fission counter also had to be repaired as well. A representative from General Atomics was called in to help with this work. However, correcting one problem seemed to lead to failure in another part of the electronics.

In February 2016, the ion chambers associated with the Log Power and the Percent Power channels were replaced and the licensee began testing the system to ensure that everything functioned properly (the Linear Power channel never exhibited any problems). At that point, a problem developed with the Log Power electronics card. Nearly every component on the card was repaired or replaced with a part of the same make and design (like-for-like replacement). Nevertheless, problems have persisted and the licensee now thinks that it could be a more general problem with the high voltage power supply in the console. Repairs and testing will continue in an effort to get the reactor into an operational state.

During this process, the licensee applied for funding from the Nuclear Energy University Program (a program sponsored by the Department of Energy) to replace their nuclear instrumentation. They were recently informed that the funding was available and they are now in the process of letting bids to establish a contract for the replacement work. The licensee estimates that the entire project (from letting the contract to completion of the work) will take from 10 months to one year to complete. In the interim, reactor operators are maintaining their qualifications by completing activities that require a license such as certain surveillance work and other related activities.

The inspector reviewed the 10 CFR 50.59 reviews associated with these actions. The reviews appeared to be adequate. It was noted that no review or evaluation had been completed to date associated with the replacement of all the nuclear instrumentation.

c. Conclusion

Audits and reviews were being conducted as required and reviewed by the RSC in accordance with the requirements specified in TS Section 6.2. The licensee's change control program was being implemented, as required.

**3. Procedures**

a. Inspection Scope (IP 69001)

The inspector reviewed selected aspects of the following to verify that the licensee was complying with the requirements of TS Sections 6.2.3, "RSC Review Function," and 6.4, "Procedures":

- Records of procedure changes
- RSC meeting minutes from June 2014 to the present
- Selected administrative and radiation protection procedures
- Related logs and records documenting procedure implementation
- Administrative controls as outlined in Description of Operations, Section III, entitled "Documentation," undated
- Form UNEP-035 R4, "Audit and Review Program Checklist," which documented the audits that had been completed

b. Observations and Findings

The inspector noted that the licensee used procedures to conduct operations at the facility. The procedures were typically comprised of checklists or forms to assist staff members in completing required work in a systematic, step-by-step manner. However, some job aides were also available for use. These procedures were available for those tasks and items required by the TS. Substantive changes to the procedures were reviewed and approved by the RSC

as required. The facility procedures were reviewed, as needed, with the last review being completed in April 2016. Training of personnel on procedures and the applicable changes was acceptable.

In the area of radiation protection, the licensee did not have facility-specific procedures, but rather referred to those maintained by the university Radiological Health Department (RHD) and contained in the Radiological Procedures and Records, which were available on-line at the RHD Web site. Those procedures were reviewed and approved by the university's Radiation Safety Committee. The licensee also had access to the University of Utah Radiation Protection Program manual and the Radiation Safety Policy Manual, which were also available on-line.

c. Conclusion

Procedural review, revision, control, and implementation satisfied TS requirements.

**4. Radiation Protection Program**

a. Inspection Scope (IP 69001)

To verify compliance with 10 CFR Parts 19, "Notices, Instructions and Reports to Workers: Inspection and Investigations," and 10 CFR Part 20, "Standards for Protection Against Radiation," and TS Sections 3.7, "Radiation Monitoring Systems and Effluents," 4.7, "Radiation Monitoring Systems," and 6.3, "Radiation Safety," the inspector reviewed selected aspects of:

- Radiological signs and postings at the facility
- Dosimetry records for 2014, 2015, and to date in 2016
- Routine surveys and monitoring documented on UNEP-020 R13, "Monthly Inspection/Surveillance Procedure"
- Maintenance and calibration of radiation monitoring equipment documented on UNEP-023 R5, "Annual Maintenance and Calibration of the Area Radiation Monitors (ARMs) and Continuous Air Monitor (CAM)"
- Radiological Health Department (RHD) "Radiological Procedures and Records (RPR) No. 1, "Radiation User Personal Data"
- Various other RHD RPR procedures including: No. 12, "Bioassays for Internal Radioactivity;" No. 44, "Training Radiation Users;" No. 45, "Radiation Emergency Response;" No. 46, "Personnel Exposure Investigation Levels and Reports;" No. 50, "Radioisotope Laboratory Evaluations;" No. 52, "Portable Radiation Survey Instruments Use and Calibration;" and No. 80, "Utah Nuclear Engineering Program (UNEP) Research (TRIGA) Reactor (UUTR)"
- Various RPR forms including: Form RPR 50A, "Laboratory Evaluation Checklist;" Form RPR 50B, "Total Contamination Survey;" Form RPR 50C, "Removable Contamination Survey;" Form RPR 50D, "Exposure Rate Survey;" Form RPR 50E, "Radionuclide Laboratory Evaluation"

Report;" Form RPR 52A, "Exposure Rate Meter Calibration Record;" and Form RPR 52B, "Contamination Survey Meter Efficiency Calibration Record"

- Facility Annual Operating Reports for the last two reporting periods

b. Observations and Findings

(1) Surveys

The inspector reviewed monthly radiation and contamination surveys of licensee controlled areas for the past 2 years, which were conducted by campus Radiological Health Department personnel. The inspector also reviewed the records documenting the monthly general area radiation and contamination surveys of the Reactor Room and support areas which were completed by licensee personnel from 2014 to present. These latter surveys had been completed, as required, by UNEP-020, "Monthly Inspection/Surveillance Procedure." The results of all the surveys reviewed were documented and evaluated, as required, and corrective actions were taken when readings or results exceeded set action levels.

During the inspection, the inspector conducted a radiation survey of the Reactor Room and adjacent laboratory and Radioactive Material Storage areas. The readings detected during this survey were compared with those recorded on survey maps, which had been completed by a campus Radiological Analyst. The survey results noted by the inspector were comparable to those recorded by the RHD Radiological Analyst and no anomalies were noted.

(2) Postings and Notices

During tours of the facility, the inspector observed that caution signs and postings in place and controls established for the controlled areas were acceptable for the hazards involving radiation, high radiation, and contamination, and were posted as required by 10 CFR Part 20, Subpart J, "Precautionary Procedures." Through observations and interviews with licensee staff, the inspector confirmed that personnel complied with the signs, postings, and controls. The facility's radioactive material storage areas were noted to be properly posted. No unmarked radioactive material was detected in the facility.

Copies of current notices to workers were posted in various areas in the facility. Radiological signs were typically posted at the entrances to controlled areas. Other postings also characterized the industrial hygiene hazards that were present in the areas as well. During a facility tour, the inspector noted that the copies of NRC Form 3, "Notice to Employees," which were posted at the facility as required by 10 CFR 19.11, were the current version. The copies were posted on the Bulletin Board by the main entrance to the Laboratory Area, in the Control Room, and at other

locations in the facility. Notices, caution signs, postings, and controls for radiation areas were as required in 10 CFR Parts 19 and 20.

(3) Dosimetry

The inspector determined that the licensee used optically-stimulated luminescent dosimeters (OSLs) for whole body monitoring of beta and gamma radiation exposure with an additional component to measure neutron radiation. The licensee also used thermoluminescent dosimeter (TLD) finger rings for monitoring beta and gamma radiation exposure of the extremities. The dosimetry was supplied and processed by a National Voluntary Laboratory Accreditation Program accredited vendor. Through direct observation the inspector determined that dosimetry was acceptably used by facility personnel and was in accordance with university radiation protection requirements. Examination of the OSL and TLD results indicating radiological exposures at the facility for the past 3 years showed that the highest occupational doses were well within 10 CFR Part 20 limitations.

(4) Radiation Monitoring Equipment Use and Calibration

The use and calibration of radiation monitoring equipment was reviewed by the inspector. Portable survey meters and friskers were calibrated by Radiological Health Department personnel. Fixed radiation detectors and the continuous air monitor were typically calibrated by licensee staff personnel. The calibration records showed that calibration frequency met the requirements established in the applicable surveillance procedures. Also, records were being maintained as required. Through observation, the inspector determined that the equipment was being used and maintained acceptably. It was noted that survey instruments awaiting repair and/or calibration, or those that were in storage and not calibrated, were labeled with a red tag to preclude inadvertent use.

(5) Radiation Protection Program and ALARA Policy

The licensee's Radiation Protection Program was established in various University of Utah campus documents including, the Radiological Health Department's "Radiological Procedures and Records," (RPRs) last updated September 2014; "The University of Utah Radiation Safety Policy Manual," latest revision dated June 1996; "The University of Utah Radiation Protection Program," undated; and RPR No. 80, "Utah Nuclear Engineering Program (UNEP) Research (TRIGA) Reactor (UUTR)." The program stated that all personnel who had unescorted access to work in a radiation area or who worked with radioactive material were required to receive training in radiation protection policies, principles, procedures, and requirements prior to starting work. The inspector also confirmed that the campus radiation protection program was being reviewed annually, as required.

The ALARA Policy was also outlined and established in the manuals and RPRs mentioned above. The ALARA program provided guidance for keeping doses as low as reasonably achievable and was consistent with the guidance in 10 CFR Part 20.

(6) Radiation Worker Training

As noted above, all university personnel who worked in radiation areas or handled radioactive material, including licensee staff, were required to receive training in radiation protection. This was accomplished by staff members completing an "Online" course, entitled "General Radiation Safety Training," and then taking a quiz on the material covered. The trainees then attended an "In-Person" class and were required to successfully pass a written examination. The class, entitled "Radioactive Materials Safety Class," was an interactive/practical session consisting of lecture, demonstration, and practical applications. Those who successfully completed the course were given a certificate. Completion of this training by facility personnel was verified by Radiological Health Department personnel, as well as by the Reactor Administrator and/or the Reactor Supervisor. Upon completion of the course, reactor staff members were then issued a dosimeter and allowed to work with a Responsible User.

The inspector reviewed documentation of the training provided to licensee staff members, including the certificates of completion. The documents indicated that all current staff members had received the required training. It was also noted that staff members who were also reactor operators received further continuing radiation protection training through the licensee's Operator Requalification Program. The inspector determined that the personnel training program satisfied requirements in 10 CFR 19.12, "Instructions to workers." The training materials appeared to be beneficial in helping trainees understand the various concepts of radiation protection. The content and periodicity of training were acceptable.

(7) Facility Tours

The inspector toured the Control Room, Reactor Room, and selected support laboratories and offices. Control of radioactive material and control of access to radiation and high radiation areas were acceptable. As noted earlier, the postings and signs for these areas were appropriate.

c. Conclusion

Based on the observations made and the records reviewed, it was determined that the Radiation Protection Program being implemented by the licensee satisfied regulatory requirements because: (1) surveys were being completed and documented acceptably; (2) postings met regulatory requirements;

(3) personnel dosimetry was being worn as required and doses were well within the NRC's regulatory limits; (4) radiation monitoring equipment was being maintained and calibrated as required; and (5) training was being conducted as required.

## 5. Effluent and Environmental Monitoring

### a. Inspection Scope (IP 69001)

The inspector reviewed the following to verify compliance with the requirements of 10 CFR Part 20 and TS Sections 3.4, "Confinement," 3.7, "Radiation Monitoring Systems and Effluents," 4.3, "Coolant System," Items 3 and 4, 5.4, "Fuel Storage," and 6.7, "Reports":

- Environmental dosimetry records for 2014, 2015, and to date in 2016
- RSC meeting minutes for the past 2 years which included a quarterly report from the university RSO containing environmental TLD results
- Maintenance and calibration of radiation monitoring equipment documented on UNEP-023 R5, "Annual Maintenance and Calibration of the Area Radiation Monitors (ARMS) and Continuous Air Monitor (CAM)"
- UNEP-032, "Liquid Effluent Discharge Authorization"
- Facility Annual Operating Reports for the last two reporting periods

### b. Observation and Findings

The inspector reviewed the area radiation monitors (ARMS) and continuous air monitor (CAM) calibration records. The ARMS and CAM had been calibrated annually in accordance with procedures by licensee staff. The monthly setpoint and high radiation warning verification records for the monitoring equipment were also reviewed. Corrective actions, including recalibration, were completed if the setpoint values were exceeded.

The inspector determined that gaseous releases continued to be monitored as required. The releases were calculated by the Radiological Health Department according to established procedure, using the EPA COMPLY code. The results were acceptably documented in the facility annual reports, as required. The inspector noted that airborne concentrations of gaseous releases were well within the concentrations stipulated in 10 CFR Part 20, Appendix B, Table 2, and TS limits. The dose rate to the public, as a result of the gaseous releases, was well below the dose constraint specified in 10 CFR 20.1101(d) of 10 millirem per year.

The inspector verified that there had been no liquid releases from the facility to the sanitary sewer within the past 2 years. It was noted that the last liquid release occurred in 2000. It was also noted that no solid waste had been transferred from the facility to the campus Radiological Health Department during the past 2 years.



On-site and off-site gamma radiation monitoring was completed using environmental TLDs in accordance with the applicable university procedures. The data indicated that there were no measurable doses above any regulatory limits. These results were also acceptably reported in the Reactor Operations Annual Report for last two reporting periods. Through observation of the facility, the inspector did not identify any new potential release paths.

c. Conclusion

Effluent monitoring satisfied license and regulatory requirements and releases were within the specified regulatory and TS limits.

**6. Transportation of Radioactive Material**

a. Inspection Scope (IP 86740)

The inspector reviewed selected aspects of:

- Radioactive material transfers and/or releases documented on UNEP-027 R6, "TRIGA Reactor Irradiation Request and Performance"
- RPR Procedures including: No. 13, "Radioisotope Acquisition and Disposition;" No. 14, "Shipment of Limited Quantity of Radioisotopes;" and No. 55, "Transportation of Radioactive Materials"
- Various forms including: Form RPR 13A, "Radioisotope Package Arrival Report;" Form RPR 13B, "Radioisotope Receipt and Verification;" and, Form RPR 13C, "Radioisotope Disposition Record"

b. Observations and Findings

Records indicated that radioactive waste designated for disposal was typically transferred from the reactor facility to the University of Utah's broad scope license, Utah Department of Environmental Quality, License Number 1800001, Amendment No. 56, effective until May 31, 2019, in accordance with Radiological Health Department requirements. The last materials that were produced in the facility and transferred from the UNEP to the broad scope license were five containers of resin. That transfer occurred several years ago.

The inspector also reviewed the documentation of transfers of radioactive sources completed between the reactor facility and the RHD. The sources were used to calibrate the ARMs in the facility. The records indicated that the shipping containers were properly packaged and surveyed and the applicable labels were filled out with the required information and attached to the shipping containers.

The inspector noted that none of the licensee personnel had the current training required to ship radioactive material as required by the Department of Transportation. In the instances involving the transfer of radioactive sources, this was not an issue because the paperwork and shipments were completed by qualified personnel in the RHD. If routine shipping operations from the reactor

resumed, the RSO indicated that licensee personnel would receive the appropriate training or RHD personnel would complete the paperwork.

c. Conclusion

The licensee transferred radioactive waste material to the campus Radiological Health Department as required. None of the licensee personnel had the current training required to ship radioactive material from the facility.

**7. Exit Meeting Summary**

The inspection scope and results were summarized on August 11, 2016, with licensee representatives. The inspector discussed the findings for each area reviewed. The licensee did not identify any of the material provided to or reviewed by the inspector as proprietary.

## **PARTIAL LIST OF PERSONS CONTACTED**

### Licensee

C. Furse Associate Vice-President for Research  
R. Schow Interim Director, Utah Nuclear Engineering Program and Reactor Supervisor

### Other Personnel

K. Langley Director, Radiological Health Department and Campus Radiation Safety  
Officer, University of Utah  
R. Porter Associate Professor of Civil Engineering and UNEP Interim Academic  
Director, University of Utah

## **INSPECTION PROCEDURE (IP) USED**

IP 69001: Class II Non-Power Reactors  
IP 86740: Inspection of Transportation Activities

## **ITEMS OPENED, CLOSED, AND DISCUSSED**

### Opened

None

### Closed

None

## **PARTIAL LIST OF ACRONYMS USED**

10 CFR Title 10 of the *Code of Federal Regulations*  
ADAMS Agencywide Documents Access and Management System  
ALARA As Low As Reasonably Achievable  
ARMs Area Radiation Monitors  
CAM Continuous Air Monitor  
No. Number  
NRC U.S. Nuclear Regulatory Commission  
OSL Optically stimulated luminescent (dosimeter)  
RHD Radiological Health Department  
RPR Radiological Procedures and Records  
RSC Reactor Safety Committee  
RSO Radiation Safety Officer  
TLD Thermoluminescent dosimeter  
TS Technical Specifications  
UNEP Utah Nuclear Engineering Program